What is claimed is:

1. A machining method for positioning a work and a tool in directions of X-, Y- and Z-axes perpendicular to one another and machining said work, comprising the steps of:

moving said work in each of said X- and Y-axis directions relatively to said Z-axis corresponding to an axis of said tool, prior to machining;

examining positioning response properties of said X- and Y-axis directions with respect to said Z-axis; and

positioning said tool in said Z-axis direction based on obtained data of said positioning response properties.

2. A machining method according to Claim 1, wherein a plurality of measuring conditions for confirming said positioning response properties are established in advance.

3. A machining method according to Claim 2, wherein said measuring conditions clarify the dependence of at least one of the movement start point, the movement direction, the movement velocity, the movement acceleration and the movement distance.

4. A machining method according to Claim 2, wherein said positioning response properties are selected from said obtained data in comparison between movement conditions to be used during machining and said measuring conditions.

5. A machining method according to Claim 1, wherein control parameters that can change said positioning response properties are prepared in advance, said control parameters are changed

when said obtained data is out of a predetermined range, said positioning response properties are examined, and said tool is positioned in said axis direction based on said control parameters with which said obtained data is within said range.

6. A machining method according to Claim 1, wherein at least one of the movement start time, the movement velocity and the movement start position with which said tool moves in said Z-axis direction is controlled based on said obtained positioning response properties.

7. A machining method according to Claim 6, wherein said movement start position is established to be shorter than a predetermined air-cut distance by a distance Lc obtained from an equation:

$$Lc=Vz(Ta-Ts)$$

using a difference Tc between movement time Ta and stabilization time Ts and a lowering velocity Vz.

8. A machining method according to Claim 1, wherein an allowable range of stabilization is established in accordance with machining accuracy, and said positioning response properties of said X- and Y-axis directions with respect to said Z-axis are examined in said established allowable range of stabilization.

9. A machining method for positioning a work and a tool in directions of X-, Y- and Z-axes perpendicular to one another and machining said work, comprising the steps of:

setting an axis of said tool as said Z-axis, and obtaining a delay of Z-axis position response of a main shaft holding said tool, prior to machining; and

setting a movement start time in said X- and Y-axes at a time point when time obtained by adding said delay of Z-axis position response of said main shaft to time required for a forward end of said tool inside said work to lift back to the surface of said work has passed since a time point when said forward end of said tool reached a cutting distance.

10. A machining method according to any one of Claims 1 to 9, wherein said tool is a drill.

11. A processing method according to any one of Claims 1 to 9, wherein said work is a printed wiring board.

12. A machining apparatus comprising:

moving means for moving a table and a main shaft relatively to each other in directions of X-, Y- and Z-axes perpendicular to one another, said table being mounted with a work, said main shaft holding a tool, said moving means being operated to machine said work;

drive means for moving said work in each of said X-axis direction and said Y-axis direction relatively to said Z-axis corresponding to an axis of said tool, prior to machining;

response property detecting means for examining positioning response properties of said X- and Y-axis directions with respect to said Z-axis; and

positioning control means for positioning said tool in said Z-axis direction based on said obtained positioning response properties.

13. A machining apparatus comprising:

moving means for moving a table and a main shaft relatively to each other in directions of X-, Y- and Z-axes perpendicular to one another, said table being mounted with a work, said main shaft holding a tool, said moving means being operated to machine said work;

program storage means for storing examination programs and machining programs;

analyzing means for reading said programs from said storage means and analyzing said read programs;

pattern storage means for storing a pattern and a stabilization time of predetermined moving operation;

pattern matching judging means for judging matching between moving operation analyzed by said analyzing means and said moving operation stored in said pattern storage means;

drive control means for moving said work and/or said tool in said X- and Y-axis directions;

command creating means for creating a Z-axis lowering command to said drive control means; and

response analyzing means for analyzing position response of said work and/or said tool in each of said axes driven by said drive control means;

wherein prior to machining, said table and said tool are moved in two directions perpendicular to said Z-axis corresponding to said main shaft under specified measuring conditions, a stabilization time required until position response of said moving means reaches and stays within a predetermined allowable range is obtained after a command-reach time of a positioning command, and at the time of machining, said tool is moved in said Z-axis direction based on said obtained stabilization time.

14. A machining apparatus according to Claim 12 or 13, further comprising:

parameter storage means for storing a set of predetermined control parameters;

wherein said drive control means acquires said control parameters from said parameter storage means, and moves said work and/or said tool in said X-axis direction and said Y-axis direction based on said control parameters.

15. A machining apparatus according to Claim 12 or 13, further comprising control means for examining positioning response properties with respect to said two directions at the time of shipment, storing a stabilization time obtained thus into said pattern storage means, and comparing said stored stabilization time with a stabilization time examined after installation, so as to judge installation conditions.

16. A machining apparatus according to Claim 15, wherein said

control means concludes that there is a trouble in a specific position of a base supporting said apparatus when said stabilization time varies widely in accordance with a coordinate value of a movement start point examined after installation.

17. A machining apparatus according to Claim 16, wherein said control means judges swinging of said apparatus based on magnitude of overshoot/undershoot of a response waveform and said stabilization time examined after installation, so as to estimate installation conditions and/or floor rigidity.

18. A machining apparatus according to any one of Claims 12 to 17, wherein said tool is a drill.

19. A machining apparatus according to any one of Claims 12 to 17, wherein said work is a printed wiring board.